AMENDMENTS TO THE CLAIMS

1. (Canceled)

2. (Previously presented) The method of Claim 40 wherein the first plurality of output data values are integers if the plurality of input data values are integers.

3. (Original) The method of Claim 2 wherein the plurality of input data values can be reconstructed exactly from the first plurality of output data values.

4. (Previously presented) The method of Claim 40 wherein the linear transform has a determinant, the determinant being invertible as one of a group consisting of an integer and an integer Laurent polynomial.

5. (Previously presented) The method of Claim 40 wherein the linear transform has a determinant, the determinant being invertible as one of a group consisting of a real number and a real Laurent polynomial, and the method further comprising rescaling at least one of a plurality of bands in the linear transform.

6. (Canceled)

7. (Previously presented) The method of Claim 40 wherein the linear transform has a property that when applied to the plurality of input data values, the plurality of input data values being zero except at one location, the second plurality of output data values generated by applying the linear transform are identical to the plurality of input data values.

8. (Previously presented) The method of Claim 40 wherein the plurality of input data values includes an input integer plurality and the second plurality of output data values includes an output integer plurality, the linear transform mapping an integer multiple of the input integer plurality to an integer multiple of the integer output plurality, the integer multiple of the input integer plurality corresponding to the integer multiple of the integer output plurality, and the method mapping the integer multiple of the integer input plurality to the corresponding integer multiple of the integer output plurality.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

9. (Previously presented) The method of Claim 40 wherein the linear transform is one of a plurality of RGB-to-YCbCr color transforms.

10. (Previously presented) The method of Claim 40 wherein the linear transform is a RGB-to-YIQ color transform.

11. (Canceled)

12. (Previously presented) The method of Claim 39 wherein the step of rearranging at least one of the plurality of input data values comprises permuting a plurality of bands, the plurality of bands including the plurality of input data values, and wherein the step of modifying the at least one of the plurality of input data values further includes permuting the plurality of bands after adding to one of the bands.

13. (Previously presented) The method of Claim 39 wherein the linear transform is a wavelet transform.

14. (Previously presented) The method of Claim 13 wherein the linear transform has a property that when applied to the plurality of input data values, the plurality of input data values being zero except at one location, the second plurality of output data values generated by applying the linear transform are identical to the plurality of input data values, and the method having the same property.

15. (Previously presented) The method of Claim 13 wherein the plurality of input data values includes an input integer plurality and the second plurality of output data values includes an output integer plurality, the linear transform mapping an integer multiple of the input integer plurality to an integer multiple of the integer output plurality, the integer multiple of the input integer plurality corresponding to the integer multiple of the integer output plurality, and the method mapping the integer multiple of the integer input plurality to the corresponding integer multiple of the integer output plurality.

16. (Original) The method of Claim 13 wherein the step of rearranging the at least one data value is performed on only adjacent data values in the plurality of input data values.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

17. (Previously presented) The method of Claim 13 wherein the step of modifying the at least one data value is performed using only adjacent data values in the plurality of input data values to modify the at least one data value.

18. (Original) The method of Claim 13 wherein the wavelet transform is a 9-7 wavelet transform.

19-38. (Canceled)

39. (Previously presented) A method for generating a first plurality of output data values by transforming a plurality of input data values using a computer, the first plurality of output data values approximating a second plurality of output data values, the second plurality of output data values generated by applying a linear transform to the plurality of input data values, the method comprising the step of:

modifying at least one data value in the plurality of current input data values, each modified data value generated by applying a linear combination of unmodified values in the plurality of input data values to the at least one data value, the linear combination comprised of an integer generated in a reproducible manner, the integer being from one of a group consisting of a rounded integer and a converted integer;

wherein the linear transform is a fixed finite-dimensional linear transform, and

wherein the step of modifying the at least one data value in the plurality of current input data values comprises:

successively sweeping through a plurality of bands of input data values in a first direction;

successively adding to each band during each successive sweep in the first direction the linear combination of unmodified values in the plurality of input data values, the linear combination being a rounded linear combination of the plurality of input data values in preceding bands;

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

successively sweeping through a plurality of bands in a second direction, the second direction being different than the first direction;

successively adding to each band during each successive sweep in the second direction the linear combination of unmodified values in the plurality of input data values, the linear combination being a rounded linear combination of the plurality of input data values in preceding bands; and

adding to one of the bands the linear combination of unmodified values in the plurality of input data values, the linear combination being a rounded linear combination of the plurality of input data values in all remaining bands.

40. (Currently amended) A method for generating a first plurality of output data values by transforming a plurality of input data values using a computer, the first plurality of output data values approximating a second plurality of output data values, the second plurality of output data values generated by applying a linear transform to the plurality of input data values, the linear transform comprising a 2x2 diagonal matrix D of determinant 1, the method comprising at least one step ~~that is equivalent to a successive combination of one or more steps~~ of the following types:

rearranging at least one data value in a plurality of current input data values;

negating at least one data value in the plurality of current input data values; [[and]]

modifying at least one data value in the plurality of current input data values, each modified data value generated by applying a linear combination of unmodified values in the plurality of input data values to the at least one data value, the linear combination comprised of an integer generated in a reproducible manner, and

a step that is equivalent to a successive combination of one or more of the preceding three types;

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

wherein an error difference between the first plurality of output data values and the second plurality of output data values is bounded, the method further comprising ~~determining an order in which to perform the successive combination of steps and determining one or more values to use in the steps~~ factoring D into four elementary matrices

$$D=\begin{pmatrix}1 & r\\ 0 & 1\end{pmatrix}\begin{pmatrix}1 & 0\\ s & 1\end{pmatrix}\begin{pmatrix}1 & -r\alpha^{-1}\\ 0 & 1\end{pmatrix}\begin{pmatrix}1 & 0\\ -s\alpha & 1\end{pmatrix}$$, where rs +1 = α; or

$$D=\begin{pmatrix}1 & 0\\ s & 1\end{pmatrix}\begin{pmatrix}1 & r\\ 0 & 1\end{pmatrix}\begin{pmatrix}1 & 0\\ -s\alpha & 1\end{pmatrix}\begin{pmatrix}1 & -r\alpha^{-1}\\ 0 & 1\end{pmatrix}$$, where rs + 1 = α^{-1}; or

factoring D into three elementary matrices and a permutation matrix

$$D=\begin{pmatrix}0 & 1\\ -1 & 0\end{pmatrix}\begin{pmatrix}1 & 0\\ \alpha & 1\end{pmatrix}\begin{pmatrix}1 & -\alpha^{-1}\\ 0 & 1\end{pmatrix}\begin{pmatrix}1 & 0\\ \alpha & 1\end{pmatrix}$$; or

$$D=\begin{pmatrix}0 & -1\\ 1 & 0\end{pmatrix}\begin{pmatrix}1 & \alpha^{-1}\\ 0 & 1\end{pmatrix}\begin{pmatrix}1 & 0\\ -\alpha & 1\end{pmatrix}\begin{pmatrix}1 & \alpha^{-1}\\ 0 & 1\end{pmatrix}$$; and

selecting a value for α and, if necessary, determining a value for r, to minimize the bound of the error difference for at least one of the preceding factorizations.

41. (Previously presented) The method of Claim 40, further comprising preserving a selected property in which $A(k\mathbf{1})=k\mathbf{e}_1$ where A is a matrix providing the linear transform, k is a constant, $\mathbf{1}$ is a vector with all entries equal to 1, and $\mathbf{e}_1$ is an elementary vector with a first entry of 1 and remaining entries of 0.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100